

REMARKS

The Application has been carefully reviewed in light of the Office Action dated June 18, 2004 (Paper No. 2). Claims 1 to 23 are in the application, of which Claims 1, 6, 7, 12 to 17 are independent. Claims 1 to 16 are being amended, and Claims 18 to 23 are being added. Reconsideration and further examination are respectfully requested.

Applicant gratefully acknowledges the Office Action's indication of patentable subject matter, with Claims 16 and 17 indicated as being allowed. A minor amendment is made to Claim 16, which is not seen to in any way impact the allowability of the claim.

The Office Action lodges an objection to the specification. More particularly, the spelling of "summarise" is objected to, and it is suggested that summarize be used for purposes of clarification. However, it is submitted that the use of the anglicized spelling of the word does not raise any uncertainty, as evidenced by the amendment proposed in the Office Action. In addition, it is believed that the benefits of consistency and simplicity outweigh the disadvantage of wholesale amendments to the specification and claims.

The Office Action objects to the phrase "The Figure", and the specification is amended in response. Accordingly, withdrawal of the objection to the specification is respectfully requested.

Claims 2 to 5 are rejected under 35 U.S.C. § 112, second paragraph, as reciting the phrase "substantially applied". In response, Claim 2 is being amended.

Reconsideration and withdrawal of the rejection are therefore respectfully requested.

Claims 1, 7 and 13 are rejected under 35 U.S.C. § 102(e) over U.S. Patent

No. 6,456,657 (Yeap), Claims 2 to 4, 8 to 10 are rejected under 35 U.S.C. § 103(a) over Yeap and U.S. Patent No. 6,539,412 (Kim), Claims 5 and 11 are rejected under 35 U.S.C. § 103(a) over Yeap and U.S. Patent No. 6,389,176 (Hsu), Claims 6, 12 and 14 are rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 6,628,716 (Tan) and Yeap, and Claim 15 is rejected under 35 U.S.C. § 102(e) over U.S. Patent No. 6,154,493 (Acharya).

The present invention generally concerns data processing using an inverse discrete wavelet transform. More particularly, the present invention concerns processing data points in a first sub-band level to form data points in a second sub-band level. According to the present invention, sets of data points from sub-bands in the first sub-band level are processed to form a set of data points in a sub-band of the second sub-band level. Data points from sub-bands in the second sub-band level are in turn processed to form data points in a subsequent sub-band level. Each set of data points is smaller than the number of data points in a corresponding sub-band level.

By virtue of this arrangement, a data point can be generated with efficient use of processing and storage.

Turning to the specific language of the claims, Claim 1 defines a method for performing an Inverse Discrete Wavelet Transform (IDWT) for a first sub-band level and a second sub-band level in an N level Discrete Wavelet Transform. Sets of data points from corresponding sub-bands of the first sub-band level are processed to form a set of processed data points in a sub-band of the second sub-band level. The set of processed data points in the sub-band of the second sub-band level is processed in conjunction with at least one set of data points from a corresponding at least one sub-band of the second sub-band level, to form a set of processed data points in a sub-band of a subsequent sub-band

level. Each set of data points is smaller than the number of data points in a corresponding sub-band level.

The applied art, namely Yeap, is not seen to disclose each and every one of the above-identified features, particularly as regards processing sets of data points from corresponding sub-bands of a first (second) sub-band level to form a set of processed data points in a sub-band of a second (subsequent) sub-band level, such that each set of data points is smaller than the number of data points in a corresponding sub-band level.

Yeap is seen to describe processing an input signal, such as a telecommunications signal, to decompose the signal into sub-band signals, which are encoded to form a single encoded signal for transmission or storage. Yeap then decodes the encoded signal to form the original input signal. (See Yeap, Abstract and Figures 4 A and 4B) Figure 4A is seen to show the process of a Discrete Wavelet Transform decomposition which provides the sub-band signals, and Figure 4B is seen to describe the synthesis of the decomposed sub-band signals to reconstruct an output signal. Referring to the description commencing at col. 8, line 5, Yeap is seen to reconstruct the output signal using up-sampling and filters (low pass and high pass filters), whereby a single data point at the j -th level requires consideration of all of the data points at the $j+1$ level.

Accordingly, Yeap is not seen to disclose processing sets of data points from corresponding sub-bands of a first (second) sub-band level to form a set of processed data points in a sub-band of a second (subsequent) sub-band level, such that each set of data points is smaller than the number of data points in a corresponding sub-band level.

The remaining art, namely Acharya, Kim, Hsu and Tan, has been reviewed and are not seen to remedy the deficiencies noted with respect to Yeap.

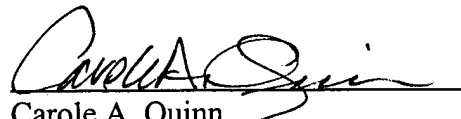
Therefore, for at least the foregoing reasons, Claim 1 is believed to be in condition for allowance. Further, Applicants submit that Claims 6, 7 and 12 to 15 are believed to be in condition for allowance for at least the same reasons.

The other claims are each dependent from the independent claims discussed above and are therefore believed patentable for the same reasons. Because each dependent claim is also deemed to define an additional aspect of the invention, however, the individual consideration of each on its own merits is respectfully requested.

In view of the foregoing, the entire application is believed to be in condition for allowance, and such action is respectfully requested at the Examiner's earliest convenience.

Applicant's undersigned attorney may be reached in our Costa Mesa, California office by telephone at (714) 540-8700. All correspondence should be directed to our address given below.

Respectfully submitted,



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